State of California
AIR RESOURCES BOARD

Notice of Public Availability of Modified Text

PUBLIC HEARING TO CONSIDER PROPOSED AMENDMENTS TO THE AMBIENT AIR QUALITY STANDARDS FOR PARTICULATE MATTER AND SULFATES

Public Hearing Date: June 20, 2002
Public Availability Date: August 15, 2002
Deadline for Public Comment: August 30, 2002

At a public hearing held June 20, 2002, the Air Resources Board (ARB or Board) approved the adoption of new section 70100.1 and the amendment of sections 70100 and 70200, title 17, California Code of Regulations (CCR), concerning ambient air quality standards for particulate matter and sulfates.

At the hearing, the Board approved modified text to the regulations that were originally noticed on May 3, 2002. This modified text deletes a proposed 24-hour standard for fine suspended particulate matter (PM2.5) contained in the amended section 70200, "Table of Standards". This action was taken in response to information received after May 3, 2002.

This notice includes two attachments. Attachment A contains all new and amended regulatory text as proposed in the May 3, 2002 notice, consisting of sections 70100, 70100.1, and 70200 (title 17, CCR). Attachment B shows the modified text of section 70200 that the Board approved at its June 20, 2002 hearing.

In accordance with section 11346.8 of the Government Code, the Board directed the Executive Officer to adopt section 70100.1 and amend sections 70100 and 70200, title 17, California Code of Regulations, after making the modified regulatory text available for public comment for a period of 15 days. The Board further provided that the Executive Officer shall consider such written comments regarding the modified text as may be submitted during this period, shall make such modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if warranted.

Written comments on the proposed modified text may be submitted by postal mail, electronic mail, or facsimile, as follows:

Postal mail is to be sent to:

Clerk of the Board
Air Resources Board
1001 "I" Street, 23rd Floor
Sacramento, California 95814

Electronic mail is to be sent to: aaqspm@listserv.arb.ca.gov

Facsimile submissions are to be transmitted to the Clerk of the Board at (916) 322-3928

In order to be considered by the Executive Officer prior to final action, comments must be received by the ARB by 5:00 p.m. on the deadline for public comment listed at the beginning of this notice. The Executive Officer will only consider comments relating to the modified text as shown in Attachment B of this notice.

Attachments (2)

ATTACHMENTS

Attachment A: New section 70100.1 and amendments to sections 70100 and 70200, title 17, California Code of Regulation, as noticed on May 3, 2002

Attachment B: Modified section 70200, title 17, California Code of Regulations, as approved at the June 20, 2002 Board hearing

ATTACHMENT A

(New section 70100.1 and amendments to sections 70100 and 70200, title 17, California Code of Regulation, as noticed on May 3, 2002)

Amend sections 70100, Title 17, California Code of Regulation, to read as follows:

Section 70100. Definitions.

Note: No changes to (a), (b), (c), (d), (e), (f), (g), (h), (i).

(j) Suspended Particulate Matter (PM_{10}10). Suspended particulate matter (PM_{10}10) refers to atmospheric particles, solid and liquid, except uncombined water as measured by a (PM_{10}10) sampler which collects 50 percent of all particles of 10 µm aerodynamic diameter and which collects a declining fraction of particles as their diameter increases and an increasing fraction of particles as their diameter decreases, reflecting the characteristics of lung deposition. Suspended particulate matter (PM_{10}10) is to be measured by ~~the size selective inlet high volume (SSI) PM_{10} sampler method in accordance with ARB Method P, as adopted in August 22, 1985, or by an equivalent (PM_{10}) sampler method~~ a California Approved Sampler (CAS) for PM10, for purposes of monitoring for compliance with the Suspended Particulate Matter (PM_{10}10) standards. Approved samplers, methods, and instruments are listed in Section 70100.1(a) below. A CAS for PM10 includes samplers, methods, or instruments determined by the Air Resources Board or the Executive Officer to produce equivalent results for PM10 with the Federal Reference Method (40 CFR, part 50, Appendix M, as published in 62 Fed. Reg., 38763, July 18, 1997).

(k) Fine ~~Total~~ Suspended Particulate Matter (PM2.5). Fine ~~Total~~ suspended particulate matter (PM2.5) refers to suspended atmospheric particles ~~of any size,~~ solid and liquid, except uncombined water as measured by a PM2.5 sampler which collects 50 percent of all particles of 2.5 µm aerodynamic diameter and which collects a declining fraction of particles as their diameter increases and an increasing fraction of particles as their diameter decreases, reflecting the characteristics of lung deposition. Fine ~~Total~~ suspended particulate matter (PM2.5) is to be measured by ~~the high volume sampler method or by an equivalent method~~ a California Approved Sampler (CAS) for PM2.5 for purposes of monitoring for compliance with the Fine Particulate Matter (PM2.5) standards. Approved samplers, methods, and instruments are listed in Section 70100.1(b) below. A CAS for PM2.5 includes samplers, method, and instruments determined by the Air Resources Board or the Executive Officer to produce equivalent results for PM2.5 with the Federal Reference Method (40 CFR, part 50, Appendix L, as published in 62 Fed. Reg., 38763, July 18, 1997).

Note: No changes to (l), (m), (n), (o).

(p) Sulfates. Sulfates are the water soluble fraction of suspended particulate matter (PM10) containing the sulfate ~~radical (SO_4)~~ ion (SO_4^{2-}) including but not limited to strong acids and sulfate salts, as measured by ~~AIHL Method No. 61 (Turbidimetric Barium Sulfate) (December 1974, as revised April 1975 and February 1976) or~~

~~equivalent method~~ MLD Method 007 (based on high-volume size-selective inlet (SSI) sampling and ion chromatography), dated April 22, 2002.

Note: No changes to (q), (r), (t).

NOTE: Authority cited: Sections 39600, ~~and~~ 39601 and 39606, Health and Safety Code.
Reference: Sections 39602 and 39606~~(b)~~, Health and Safety Code.

Add section 70100.1, Title 17, California Code of Regulation, to read as follows:

Section 70100.1. Methods, Samplers, and Instruments for Measuring Pollutants

(a) PM10 Methods. The following samplers, methods, and instruments are California Approved Samplers for PM10 for the purposes of monitoring for compliance with the Suspended Particulate Matter (PM10) standards:

(1) Federal Reference Method for the Determination of Particulate Matter as PM10 in the Atmosphere (40 CFR, Chapter 1, part 50, Appendix M, as published in 62 Fed. Reg., 38753, July 18, 1997). The specific samplers approved are:

(A) Andersen Model RAAS10-100 PM10 Single Channel PM10 Sampler, U.S. EPA Manual Reference Method RFPS-0699-130, as published in 64 Fed. Reg., 33481, June 23, 1999.

(B) Andersen Model RAAS10-200 PM10 Single Channel PM10 Audit Sampler, U.S. EPA Manual Reference Method RFPS-0699-131, as published in 64 Fed. Reg., 33481, June 23, 1999.

(C) Andersen Model RAAS10-300 PM10 Multi Channel PM10 Sampler, U.S. EPA Manual Reference Method RFPS-0669-132, as published in 64 Fed. Reg., 33481, June 23, 1999.

(D) Graesby Andersen/GMW Model 1200 High-Volume Air Sampler, U.S. EPA Manual Reference Method RFPS-1287-063, as published in 52 Fed. Reg., 45684, December 1, 1987 and in 53 Fed. Reg., 1062, January 15, 1988.

(E) Graesby Andersen/GMW Model 321B High-Volume Air Sampler, U.S. EPA Manual Reference Method RFPS-1287-064, as published in 52 Fed. Reg., 45684, December 1, 1987 and in 53 Fed. Reg., 1062, January 15, 1988.

(F) Graesby Andersen/GMW Model 321-C High-Volume Air Sampler, U.S. EPA Manual Reference Method RFPS-1287-065, as published in 52 Fed. Reg., 45684, December 1, 1987 and in 53 Fed. Reg., 1062, January 15, 1988.

(G) BGI Incorporated Model PQ100 Air Sampler, U.S. EPA Manual Reference Method RFPS-1298-124, as published in 63 Fed. Reg., 69624, December 17, 1998.

(H) BGI Incorporated Model PQ200 Air Sampler, U.S. EPA Manual Reference Method RFPS-1298-125, as published in 63 Fed. Reg., 69624, December 17, 1998.

(2) Continuous samplers:

(A) Andersen Beta Attenuation Monitor Model FH 62 C14 equipped with the following components: louvered PM10 inlet, volumetric flow controller, automatic filter change mechanism, automatic zero check, and calibration control foils kit*.

(B) Met One Beta Attenuation Monitor Model 1020 equipped with the following components: louvered PM10 size selective inlet, volumetric flow controller, automatic filter change mechanism, automatic heating system, automatic zero and span check capability*.

(C) Rupprecht & Patashnick Series 8500 Filter Dynamics Measurement System equipped with the following components: louvered PM10 size selective inlet, volumetric flow control, flow splitter (3 liter/min sample flow), sample equilibration system (SES) dryer, TEOM sensor unit, TEOM control unit, switching valve, purge filter conditioning unit, and palliflex TX40, 13 mm effective diameter cartridge*.

(b) PM2.5 Methods. The following samplers, methods, and instruments are California Approved Samplers for PM2.5 for the purposes of monitoring for compliance with the Fine Particulate Matter (PM2.5) standards:

(1) Federal Reference Method for the Determination of Particulate Matter as PM2.5 in the Atmosphere, 40 CFR, part 50, Appendix L, as published in 62 Fed. Reg., 38763, July 18, 1997 and as amended in 64 Fed. Reg., 19717, April 22, 1999. These must use either the WINS impactor or the U.S. EPA-approved very sharp cut cyclone (67 Fed. Reg., 15566, April 2, 2002) to separate PM2.5 from PM10. The specific samplers approved are:

(A) Andersen Model RAAS 2.5-200 PM2.5 Ambient Audit Air Sampler, U.S. EPA Manual Reference Method RFPS-0299-128, as published in 64 Fed. Reg., 12167, March 11, 1999.

(B) Graesby Andersen Model RAAS 2.5-100 PM2.5 Ambient Air Sampler, U.S. EPA Manual Reference Method RFPS-0598-119, as published in 63 Fed. Reg., 31991, June 11, 1998.

(C) Graesby Andersen Model RAAS 2.5-300 PM2.5 Sequential Ambient Air Sampler, U.S. EPA Manual Reference Method RFPS-0598-120, as published in 63 Fed. Reg., 31991, June 11, 1998.

(D) BGI Inc. Models PQ200 and PQ200A PM2.5 Ambient Fine Particle Sampler, U.S. EPA Manual Reference Method RFPS-0498-116, as published in 63 Fed. Reg., 18911, April 16, 1998.

(E) Rupprecht & Patashnick Partisol-FRM Model 2000 Air Sampler, U.S. EPA Manual Reference Method RFPS-0498-117, as published in 63 Fed. Reg., 18911, April 16, 1998.

(F) Rupprecht & Patashnick Partisol Model 2000 PM-2.5 Audit Sampler, as described in U.S. EPA Manual Reference Method RFPS-0499-129, as published in 64 Fed. Reg., 19153, April 19, 1999.

(G) Rupprecht & Patashnick Partisol-Plus Model 2025 Sequential Air Sampler, U.S. EPA Manual Reference Method RFPS-0498-118, as published in 63 Fed. Reg., 18911, April 16, 1998.

(H) Thermo Environmental Instruments, Incorporated Model 605 “CAPS” Sampler, U.S. EPA Manual Reference Method RFPS-1098-123, as published in 63 Fed. Reg., 58036, October 29, 1998.

(I) URG-MASS100 Single PM2.5 FRM Sampler, U.S. EPA Manual Reference Method RFPS-0400-135, as published in 65 Fed. Reg., 26603, May 8, 2000.

(J) URG-MASS300 Sequential PM2.5 FRM Sampler, U.S. EPA Manual Reference Method RFPS-0400-136, as published in 65 Fed. Reg., 26603, May 8, 2000.

(2) Continuous samplers:

(A) Andersen Beta Attenuation Monitor Model FH 62 C14 equipped with the following components: louvered PM10 size selective inlet, very sharp cut or sharp cut cyclone, volumetric flow controller, automatic filter change mechanism, automatic zero check, and calibration control foils kit*.

(B) Met One Beta Attenuation Monitor Model 1020 equipped with the following components: louvered PM10 size selective inlet, very sharp cut or sharp cut cyclone, volumetric flow controller, automatic filter change mechanism, automatic heating system, and automatic zero and span check capability*.

(C) Rupprecht & Patashnick Series 8500 Filter Dynamics Measurement System equipped with the following components: louvered PM10 size selective inlet, very sharp cut or sharp cut cyclone, volumetric flow control, flow splitter (3 liter/min sample flow), sample equilibration system (SES) dryer, TEOM sensor unit, TEOM control unit, switching valve, purge filter conditioning unit, and palliflex TX40, 13 mm effective diameter cartridge*.

*Instrument shall be operated in accordance with the vendor's instrument operation manual that adheres to the principles and practices of quality control and quality assurance as specified in Volume I of the "Air Monitoring Quality Assurance Manual", as printed on April 17, 2002, and available from the California Air Resources Board, Monitoring and Laboratory Division, P.O. Box 2815, Sacramento CA 95814, incorporated by reference herein.

Note: Authority cited: Sections 39600, 39601 and 39606, Health and Safety Code.
Reference: Sections 39014, 39606, 39701, 39703(f) and 57004, Health and Safety Code.

Amend section 70200, Title 17, California Code of Regulation, to read as follows:

Section 70200. Table of Standards ***

[Note: no changes are proposed to standards for any substances not listed]

Substance	Concentration and Methods*	Duration of Averaging Periods	Most Relevant Effects	Comments
Suspended Particulate Matter (PM_{10}10)	50 µg/m^3 PM_{10}10** ~~30µg/m^3 PM_{10}**~~ 20 µg/m^3 PM10** ~~SSI Method in accordance with Method P~~ California Approved Sampler as listed in section 70100.1(a)	24 hour sample 24 hour samples, annual ~~geometric~~ arithmetic mean	Prevention of excess deaths, illness and restrictions in activity from short- and long-term exposures. Illness outcomes include, but are not limited to, respiratory symptoms, bronchitis, asthma exacerbation, emergency room visits and hospital admissions for cardiac and respiratory diseases. Sensitive subpopulations include children, the elderly, and individuals with pre-existing cardiopulmonary ~~from short-term exposures and of exacerbation of symptoms in sensitive patients with respiratory~~ disease. ~~Prevention of excess seasonal declines in pulmonary function, especially in children.~~	This standard applies to suspended matter as measured by PM_{10}10 sampler, which collects 50% of all particles of 10 µm aerodynamic diameter and collects a declining fraction of particles as their diameter increases, reflecting the characteristics of lung deposition.
Fine Suspended Particulate Matter (PM2.5)	25µg/m^3 PM2.5** 12µg/m^3 PM2.5** California Approved Sampler as listed in section 70100.1(b)	24 hour sample 24 hour samples, annual arithmetic mean	Prevention of excess deaths and illness from short- and long-term exposures. Illness outcomes include, but are not limited to, respiratory symptoms, asthma exacerbation, and hospital admissions for cardiac and respiratory diseases. Sensitive subpopulations include children, the elderly, and individuals with pre-existing cardiopulmonary disease.	This standard applies to fine suspended matter as measured by PM2.5 sampler, which collects 50% of all particles of 2.5µm aerodynamic diameter and collects a declining fraction of particles as their diameter increases, reflecting the characteristics of lung deposition.
Sulfates	25 µg/m^3 total sulfates, ~~AIHL #61 (Turbimetric Barium Sulfate)~~ MLD Method 007	24 hours	a. Decrease in ventilatory function b. Aggravation of asthmatic symptoms c. Aggravation of cardio-pulmonary disease d. Vegetation damage e. Degradation of visibility f. Property damage	This standard is based on a Critical Harm Level, not a threshold value.

* Any equivalent procedure which can be shown to the satisfaction of the Air Resources Board to give equivalent results at or near the level of the air quality standard may be used.

** These standards are violated when concentrations exceed those set forth in the body of the regulation. All other standards are violated when concentrations equal or exceed those set forth in the body of the regulation.

*** Applicable statewide unless otherwise noted.

**** These standards are violated when particle concentrations cause measured light extinction values to exceed those set forth in the regulations.

Note: Authority cited: Sections 39600, 39601(a) and 39606~~(b)~~, Health and Safety Code.
Reference: Sections 39014, 39606~~(b)~~, 39701 and 39703(f), Health and Safety Code; Western Oil and Gas Ass'n v. Air Resources Bd. (1984) 37 Cal.3d 502.

ATTACHMENT B

(Modified section 70200, title 17, California Code of Regulations,
as approved at the June 20, 2002 Board hearing)

[Modified text consists of deletions shown in ~~double strikeout~~ type]

Amend section 70200, Title 17, California Code of Regulation, to read as follows:

Section 70200. Table of Standards ***

[Note: no changes are proposed to standards for any substances not listed]

Substance	Concentration and Methods*	Duration of Averaging Periods	Most Relevant Effects	Comments
Fine Suspended Particulate Matter (PM2.5)	~~25µg/m^3 PM2.5**~~ 12µg/m^3 PM2.5** California Approved Sampler as listed in section 70100.1(b)	~~24 hour sample~~ 24 hour samples, annual arithmetic mean	Prevention of excess deaths and illness from ~~short- and~~ long-term exposures. Illness outcomes include, but are not limited to, respiratory symptoms, asthma exacerbation, and hospital admissions for cardiac and respiratory diseases. Sensitive subpopulations include children, the elderly, and individuals with pre-existing cardiopulmonary disease.	This standard applies to fine suspended matter as measured by PM2.5 sampler, which collects 50% of all particles of 2.5µm aerodynamic diameter and collects a declining fraction of particles as their diameter increases, reflecting the characteristics of lung deposition.

* Any equivalent procedure which can be shown to the satisfaction of the Air Resources Board to give equivalent results at or near the level of the air quality standard may be used.

** These standards are violated when concentrations exceed those set forth in the body of the regulation. All other standards are violated when concentrations equal or exceed those set forth in the body of the regulation.

*** Applicable statewide unless otherwise noted.